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**Amendment**

In response to the above mentioned Office action please enter the amended claims as follows:

**In the Claims**

Please amend the claims as follows:

1. (Amended) A method of fabrication of etching a low -k dielectric layer used in microelectronics fabrication; comprising the steps of :

- a) forming an organic low k dielectric layer over a substrate;
- b) forming a masking pattern over said organic low k dielectric layer; said masking pattern having an opening;
- c) using an etch process to etch said organic low k dielectric layer through said opening to form a first opening using said resist pattern as an etch mask; said etch process comprising:

(1) in a first step, etching said organic low k dielectric layer by applying a plasma power and flowing at least  $\text{NH}_3$  gas and flowing  $\text{CO}$  or  $\text{O}_2$  gasses.

Cancel claim 2

Cancel claim 3

4. (Amended) The method of claim 1 wherein said first step comprises applying a plasma power plasma density between  $1\text{E}9$  and  $1\text{E}11 \text{ cm}^{-3}$  and flowing  $\text{NH}_3$  gas, a power in between 500 and 1500 W, and a  $\text{NH}_3$  flow between 50 and 300 sccm and a pressure between 80 and 800 mTorr and flowing  $\text{CO}$  or  $\text{O}_2$  gasses.

9. (Amended) The method of claim 1 wherein said etch forms said first opening through said organic low k dielectric layer; said first opening having sidewalls defined by said organic low k dielectric layer; said sidewalls are substantially vertical at a angle between 87 and 93 degrees to the surface of the substrate; and said first step comprises applying a plasma power plasma density between  $1\text{E}9$  and  $1\text{E}11 \text{ cm}^{-3}$  and flowing  $\text{NH}_3$  gas, a power in between 500

1 and 1500 W, and a  $\text{NH}_3$  flow between 50 and 300 sccm and a pressure between 80 and 800  
2 mTorr and flowing CO or  $\text{O}_2$  gasses.

3 *13*  
4  
5 11. **(AMENDED)** A method of fabrication of etching a low -k dielectric layer, comprising the  
6 steps of :

7 a) forming an organic low k dielectric layer over an insulation layer over a  
8 substrate;

9 b) forming a masking pattern over said organic low k dielectric layer; said  
10 masking pattern having an opening;

11 *sub B1* c) using an etch process to etch said organic low k dielectric layer through said  
12 opening to form a first opening using said masking pattern as an etch mask; said etch  
13 process comprising:

14 (1) in a first step, etching said organic low k dielectric layer by applying a plasma  
15 power and flowing  $\text{NH}_3$  and  $\text{H}_2$  etch gasses and flowing  $\text{O}_2$  or CO gasses.

16  
17 **Cancel claim 12**

18  
19 13. **(Amended)** The method of claim 11 wherein said first step comprises:

20 *AS* a plasma power between 500 and 1500 W, plasma power plasma density  
21 between  $1\text{E}9$  and  $1\text{E}11 \text{ cm}^{-3}$ , a  $\text{NH}_3$  flow between 50 and 300 sccm, a  $\text{H}_2$  flow between 50 and  
22 300 sccm and a pressure between 80 and 800 mTorr and flowing  $\text{O}_2$  or CO gasses.

23  
24 14. **(Amended)** The method of claim 11 wherein said organic low k dielectric is comprised of a  
25 material selected from the group consisting of fluorinated arylether, Benzocyclobutene  
26 (BCB), amorphous teflon, carbon doped oxides, poly arylene ether (PAE) and organic Spin on  
27 materials.

28 18. **(Amended)** The method of claim 11 wherein said etch forms said first opening through said  
29 organic low k dielectric layer; said first opening having sidewalls defined by said organic low  
30 k dielectric layer; said sidewalls are substantially vertical at a angle between 87 and 93  
31 degrees to the surface of the substrate; and said first step comprises:

1 a plasma power between 500 and 1500 W, plasma power plasma density  
2 between  $1\text{E}9$  and  $1\text{E}11\text{ cm}^3$ , a  $\text{NH}_3$  flow between 50 and 300 sccm, a  $\text{H}_2$  flow between 50 and  
3 300 sccm and a pressure between 80 and 800 mTorr and flowing  $\text{O}_2$  or  $\text{CO}$  gasses.

4 19. (Amended) A method of fabrication of etching a low -k dielectric layer; comprising the  
5 steps of:

6 a) forming an organic low k dielectric layer over a insulation layer over a  
7 substrate;

8 b) forming a masking pattern over said organic low k dielectric layer; said  
9 masking pattern having an opening;

10 c) using an etch process to etch said organic low k dielectric layer through said  
11 opening to form a first opening using said masking pattern as an etch mask; said etch  
12 process comprising:

13 (1) in a first step, etching said organic low k dielectric layer by applying a plasma  
14 power and flowing only  $\text{NH}_3$  and  $\text{N}_2$  etch gasses.

15  
16 20. (Amended) The method of claim 19 wherein said first step comprises:

17 power in between 500 and 1500 W, plasma power plasma density between  
18  $1\text{E}9$  and  $1\text{E}11\text{ cm}^3$ , a  $\text{NH}_3$  flow between 50 and 300 sccm and a  $\text{N}_2$  flow between 50 and 300  
19 sccm and a pressure between 80 and 800 mTorr.

20 21. (Amended) The method of claim 19 wherein said first step comprises:

21 power in between 500 and 1500 W, plasma power plasma density between  
22  $1\text{E}9$  and  $1\text{E}11\text{ cm}^3$ , a  $\text{NH}_3$  flow between 50 and 300 sccm and a  $\text{N}_2$  flow between 50 and 300  
23 sccm and a pressure between 80 and 800 mTorr and flowing  $\text{CO}$  or  $\text{O}_2$  gasses.

24  
25 26. (Amended) The method of claim 19 wherein said etch forms said first opening through  
26 said organic low k dielectric layer; said first opening having sidewalls defined by said organic  
27 low k dielectric layer; said sidewalls are substantially vertical at a angle between 87 and 93  
28 degrees to the surface of the substrate.

29  
30 Please add new claims as follows

1 27 A method of fabrication of etching a low -k dielectric layer; comprising the steps of:

2 a) forming an organic low k dielectric layer over a insulation layer over a  
3 substrate; said organic low k dielectric is comprised of a material selected from the  
4 group consisting of fluorinated arylether, Benzocyclobuthene, amorphous teflon,  
5 carbon doped oxides, and organic Spin on materials.

6 b) forming a masking pattern over said organic low k dielectric layer; said  
7 masking pattern having an opening;

8 c) using an etch process to etch said organic low k dielectric layer through said  
9 opening to form a first opening using said masking pattern as an etch mask; said etch  
10 process comprising:

11 (1) in a first step, etching said organic low k dielectric layer by applying a plasma  
12 power and flowing  $\text{NH}_3$  and  $\text{N}_2$  etch gasses and flowing CO or  $\text{O}_2$  gasses.  
13

14 28. The method of claim 27 wherein said first step comprises:

15 power in between 500 and 1500 W, plasma power plasma density between  
16  $1\text{E}9$  and  $1\text{E}11 \text{ cm}^{-3}$ , a  $\text{NH}_3$  flow between 50 and 300 sccm and a  $\text{N}_2$  flow between 50 and 300  
17 sccm and a pressure between 80 and 800 mTorr and flowing CO or  $\text{O}_2$  gasses.

18 29. The method of claim 27 wherein said first step comprises:

19 power in between 500 and 1500 W, plasma power plasma density between  
20  $1\text{E}9$  and  $1\text{E}11 \text{ cm}^{-3}$ , a  $\text{NH}_3$  flow between 50 and 300 sccm and a  $\text{N}_2$  flow between 50 and 300  
21 sccm and a pressure between 80 and 800 mTorr and flowing CO or  $\text{O}_2$  gasses; and

22 said etch forms said first opening through said organic low k dielectric layer;  
23 said first opening having sidewalls defined by said organic low k dielectric layer; said sidewalls  
24 are substantially vertical at a angle between 87 and 93 degrees to the surface of the substrate.